

Having described the invention, the following is claimed:

1. An inflator comprising:

a structure defining first and second chambers, said first chamber being for containing a volume of fluid under pressure, said second chamber being in fluid communication with an outlet passage for directing fluid from the inflator;

a closure member openable to release said fluid to flow out of said first chamber;

an initiator actuatable to open said closure member; and

a filter disposed in said second chamber, said fluid being directed from said first chamber into said second chamber and through said filter into said outlet passage upon opening of said closure member.

2. The inflator as recited in claim 1, wherein said filter comprises a first portion engaging said initiator and a second portion engaging a surface in said second chamber, said initiator being urged against said first portion which urges said second portion against said surface to clamp said filter in said chamber between said initiator and said surface.

3. The inflator as recited in claim 1, wherein said filter comprises a ring-shaped top wall, a ring shaped bottom wall, and a cylindrical side wall extending between said top wall and said bottom wall, said side wall including a plurality of apertures through which said fluid flows to said outlet passages.

4. The inflator as recited in claim 3, wherein said top wall of said filter engages an annular portion of said initiator and said bottom wall engages an annular surface in said second chamber, said initiator urging said bottom wall against said annular surface to clamp said filter in said second chamber between said initiator and said annular surface.

5. The inflator as recited in claim 3, wherein said cylindrical side wall of said filter defines a cylindrical space extending from said top wall to said bottom wall, said initiator including a cap portion extending at least partially into said cylindrical space.

6. The inflator as recited in claim 1, wherein said first and second chambers are aligned with each

other along an axis of the inflator, said fluid flowing from said first chamber into said second chamber in a direction parallel to said axis, said fluid flowing perpendicular to said axis through said outlet passage.

7. The inflator as recited in claim 1, wherein said structure comprises:

a container having an open end and an opposite closed end; and

an end cap fixed to said open end of said container, said first chamber being defined within said container and extending into said end cap, said second chamber being defined in said end cap, said closure member being fixed to an inner surface of said end cap and separating said first and second chambers.

8. The inflator as recited in claim 7, wherein said container comprises a cylindrical side wall having an outside diameter, said end cap comprising a side wall with a cylindrical outer surface having an outside diameter about equal to the outside diameter of said container, said container and said end cap being aligned with each other along a common axis, said side wall of said end cap having a varying wall thickness, a

portion of said side wall of said end cap forming an annular surface to which said closure member is fixed, said outlet passage extending perpendicular to said axis from said second chamber through said side wall of said end cap.

9. The inflator as recited in claim 8, wherein said filter comprises a ring-shaped top wall, a ring shaped bottom wall, and a cylindrical side wall extending between said top wall and said bottom wall, said side wall including a plurality of apertures through which said fluid flows to said outlet passage, said top wall engaging an annular portion of said initiator and said bottom wall engaging an annular surface of said side wall of said end cap, said end cap including an annular rim portion crimped onto said initiator to urge said initiator against said top wall and urge said bottom wall against said annular surface to clamp said filter in said second chamber between said initiator and said annular surface.

10. The inflator as recited in claim 1, wherein said closure member comprises a burst disk rupturable

to release said inflation fluid to flow from said container.

11. An inflator actuatable to provide inflation fluid for inflating an inflatable vehicle occupant protection device, said inflator comprising:

    a container portion comprising a first chamber for containing a volume of inflation fluid under pressure;

    a closure member openable to release said inflation fluid to flow out of said first chamber;

    an output portion for directing said inflation fluid into said inflatable vehicle occupant protection device, said output portion comprising a second chamber into which said inflation fluid is directed from said first chamber and an outlet passage through which said inflation fluid is directed from said second chamber into the inflatable vehicle occupant protection device;

    a filter disposed in said second chamber, said inflation fluid being directed from said first chamber into said second and through said filter into said outlet passage upon opening of said closure member; and

an initiator actuatable to open said closure member, said initiator being disposed in said second chamber and engaging a first portion of said filter, a second portion of said filter engaging a surface in said second chamber, said initiator being urged against said first portion which urges said second portion against said surface to clamp said filter in said chamber between said initiator and said surface.

12. The inflator as recited in claim 11, wherein said first portion of said filter comprises a ring shaped top wall of said filter and said second portion of said filter comprises a ring shaped bottom wall of said filter, said filter further comprising a cylindrical side wall extending between said top wall and said bottom wall, said side wall comprising a plurality of apertures through which said inflation fluid flows from said second chamber to said outlet passage.

13. An inflator actuatable to provide inflation fluid for inflating an inflatable vehicle occupant protection device, said inflator comprising:

container means comprising a first chamber for containing a volume of inflation fluid under pressure, said container means having a closure member openable to release said inflation fluid to flow out of said first chamber;

initiator means actuatable to open said closure member;

output means for directing said inflation fluid into said inflatable vehicle occupant protection device, said output means comprising a second chamber into which said inflation fluid is directed from said first chamber and an outlet passage through which said inflation fluid is directed from said second chamber into the inflatable vehicle occupant protection device; and

filter means disposed in said second chamber between said initiator means and a surface of said output means, a portion of said output means being deformed onto said initiator means to urge said initiator means into said second chamber to clamp said filter means between said initiator means and said surface of said output means, said inflation fluid being directed from said first chamber into said second

chamber and through said filter means into said outlet passage upon opening of said closure member.

14. An apparatus for helping to protect an occupant of a vehicle that has a side structure, said apparatus comprising:

an inflatable vehicle occupant protection device that is inflatable between the side structure of the vehicle and a vehicle occupant;

a container for storing under pressure inflation fluid for inflating the inflatable vehicle occupant protection device;

a closure member openable to release said inflation fluid to flow from said container;

output means including a chamber into which said inflation fluid flows from said container when said closure member is ruptured, said output means further including an outlet passage through which said inflation flows from said chamber toward said inflatable vehicle occupant protection device;

an initiator actuatable to rupture said closure member; and

a filter disposed in said chamber, said inflation fluid being directed from said container into

said chamber and through said filter into said outlet passage upon opening of said closure member.

15. Apparatus as defined in claim 14, further comprising a fill tube arranged in fluid conductivity with said outlet passage and having a portion located in said inflatable vehicle occupant protection device, said fill tube being for delivering said inflation fluid from said inflator into said inflatable vehicle occupant protection device to inflate said inflatable vehicle occupant protection device.